

What is claimed is:

1. A method of generating illumination characteristic data around an image display device, comprising:
 - 5 obtaining predetermined illumination characteristic data around the image display device; and
 - making the predetermined illumination characteristic data into a data format comprising a type block and an illuminance block,
 - wherein the type block indicates information on a type of illumination, and the illuminance block indicates information on the illuminance of illumination.
- 10 2. The method of claim 1, wherein illumination characteristic data is obtained directly from a user via an interface.
- 15 3. The method of claim 2, wherein the predetermined illumination characteristic data comprises:
 - information on the type of illumination; and
 - information on the illuminance of illumination.
- 20 4. The method of claim 3, wherein the information on the type of illumination is about one of an incandenscent lamp, a floorescent lamp, daylight, and skylight.
5. The method of claim 3, wherein the information on illuminance of illumination is about dark, dim, bright, and very bright phases.
- 25 6. The method of claim 1, wherein illumination characteristic data is obtained via a measurement sensor.
- 30 7. The method of claim 6, wherein the predetermined illumination characteristic data comprises:
 - information on the type of illumination; and
 - information on the illuminance of illumination.

8. The method of claim 7, wherein the information on the type of illumination comprises at least one of a color temperature of illumination and a coordinate value in chromaticity coordinates of illumination.

- 5 9. The method of claim 7, wherein the information on the illuminance of illumination is a numerical illuminance value represented in the units of Lux.

10. The method of claim 2, wherein the illumination characteristic data obtained by the user interface is transformed using a predetermined mapping table into the illumination characteristic data which comprises information on the type of illumination and information on the illuminance of illumination, wherein the information on the type of illumination comprises at least one of a color temperature of illumination and a coordinate value in chromaticity coordinates of illumination.

15 11. The method of claim 6, wherein the illumination characteristic data obtained by the measurement sensor is transformed using a predetermined mapping table into the illumination characteristic data which comprises information on the type of illumination and information on the illuminance of illumination, wherein the information on the type of illumination is about one of an incandescent lamp, a 20 fluorescent lamp, daylight, and skylight, and the information on illuminance of illumination is about dark, dim, bright, and very bright phases.

12. The method of claim 1, wherein the type block comprises:
25 a flag to indicate whether data in a type payload is a color temperature value or a chromaticity coordinate value; and

the type payload to indicate one of the color temperature value when the flag comprises information for indicating the color temperature and the chromaticity coordinate value when the flag comprises information for indicating the chromaticity coordinate value.

30 13. The method of claim 12, wherein the flag further comprises information for indicating whether the data in the type payload is semantic information on the type of illumination, and the type payload further comprises information on one of an

incandenscent lamp, a floorescent lamp, daylight, and skylight when the flag is information indicating for semantic information.

14. The method of claim 12, wherein when the flag has a value of "0", the
5 data in the type payload is the color temperature value, and when the flag has a
value of "1", the data in the type payload is x-y chromaticity coordinates.

15. The method of claim 13, wherein when the flag has a value of "2", the
data in the type payload is semantic information, and when the semantic information
10 has a value of "0", the semantic information indicates the incandenscent lamp, when
the semantic information has a value of "1", the semantic information indicates the
floorescent lamp, and when the semantic information has a value of "3", the semantic
information indicates the daylight.

15 16. The method of claim 1, wherein the illuminance block comprises data
for indicating a numerical Lux value.

17. The method of claim 1, wherein the illuminance block comprises:
20 a flag to indicate whether data in an illuminance payload is a numerical value
or a semantic value; and

the illuminance payload comprising the data for indicating a numerical Lux
value when the flag comprises information for indicating the numerical value or one
of dark, dim, bright, and very bright phases when the flag comprises information for
indicating the semantic value.

25 18. The method of claim 17, wherein when the flag has a value of "0", the
data in the illuminance payload indicates the numerical Lux value, when the flag has
a value of "1", the data in the illuminance payload indicates the semantic value, and
when the semantic value is "0", the semantic value indicates the dark phase, when
30 the semantic value is "1", the semantic value indicates the dim phase, when the
semantic value is "2", the semantic value indicates the bright phase, and when the
semantic value is "3", the semantic value indicates the very bright phase.

19. An apparatus for generating illumination characteristic data around an image display device, comprising:

an illumination characteristic obtainer which obtains illumination characteristic data comprising information on a type and illuminance of illumination; and

5 an illumination characteristic data generator which makes the illumination characteristic data into a data format comprising a type block and an illuminance block,

10 wherein the type block indicates information on the type of illumination, and the illuminance block indicates information on the illuminance of illumination.

15 20. The apparatus of claim 19, wherein the information on the type of illumination is about one of an incandenscent lamp, a floresent lamp, daylight, and skylight, and the information on illuminance of illumination is about dark, dim, bright, and very bright phases.

15 20. The apparatus of claim 19, wherein the information on the type of illumination comprises at least one of a color temperature of illumination and a coordinate value in chromaticity coordinates of illumination, and the information on the illuminance of illumination is a numerical illuminance value represented in the units of Lux.

25 22. The apparatus of claim 19, wherein the illumination characteristic obtainer comprises at least one of a user interface and a measurement sensor, the user interface obtaining illumination characteristic data directly from a user via an interface and the measurement sensor obtaining illumination characteristic data by measuring illumination characteristics.

23. The apparatus of claim 19, wherein the type block comprises:

30 a flag to indicate whether data in a type payload is a color temperature value or a chromaticity coordinate value; and

the type payload to indicate one of the color temperature value when the flag comprises information for indicating the color temperature and the chromaticity coordinate value when the flag comprises information for indicating the chromaticity coordinate value,

and

the illuminance block comprises a numerical value for indicating the illuminance of illumination.

- 5 24. The apparatus of claim 19, wherein the type block comprises:

a flag to indicate whether data in a type payload is a color temperature value, a chromaticity coordinate value, or semantic information on the type of illumination; and

the type payload to indicate the color temperature value when the flag comprises information for indicating the color temperature value, the chromaticity coordinate value when the flag comprises information for indicating the chromaticity coordinate value, or one of an incandescent lamp, a fluorescent lamp, daylight, and skylight when the flag comprises information for indicating the semantic information,

and

15 the illuminance block comprises:

a flag to indicate whether data in an illuminance payload is a numerical value or a semantic value; and

the illuminance payload comprising the data for indicating a numerical Lux value when the flag comprises data for indicating the numerical value or one of dark, dim, bright, and very bright phases when the flag comprises data for indicating the semantic value.

25 25. An apparatus for compensating for a color variation, comprising:

an illumination characteristic data unit which generates and outputs

25 illumination characteristic data around an image display device, the illumination characteristic data comprising a data format comprising a type block for indicating information on a type of illumination and an illuminance block for indicating information on illuminance of illumination; and

30 a color variation compensator which analyzes the illumination characteristic data to compensate for a color variation in an input image according to the type and illuminance of illumination.

26. The apparatus of claim 25, wherein the illumination characteristic data unit further comprises an illumination characteristic data obtainer which obtains the

illumination characteristic data on the type and illuminance of illumination around the image display device.

27. The apparatus of claim 26, wherein the illumination characteristic data obtainer obtains the illumination characteristic data directly from one of a user via a user interface and a measurement sensor.

28. The apparatus of claim 25, wherein the type block comprises:
a flag to indicate whether data in a type payload is a color temperature value
or a chromaticity coordinate value; and

the type payload to indicate one of the color temperature value when the flag comprises information for indicating the color temperature and the chromaticity coordinate value when the flag comprises information for indicating the chromaticity coordinate value,

and

the illuminance block comprises a numerical value for indicating the illuminance of illumination.

29. The apparatus of claim 25, wherein the type block comprises:
a flag to indicate whether data in a type payload is a color temperature value,
a chromaticity coordinate value, or semantic information on the type of illumination;
and

the type payload to indicate the color temperature value when the flag comprises information for indicating the color temperature value, the chromaticity coordinate value when the flag comprises information for indicating the chromaticity coordinate value, or one of an incandescent lamp, a fluorescent lamp, daylight, and skylight when the flag comprises information for indicating the semantic information,

and

the illuminance block comprises:

a flag to indicate whether data in an illuminance payload is a numerical value or a semantic value; and

the illuminance payload comprising the data for indicating a numerical Lux value when the flag comprises data for indicating the numerical value or one of dark,

dim, bright, and very bright phases when the flag comprises data for indicating the semantic value.

30. The apparatus of claim 25, wherein the color variation compensator comprises:

- 5 an illumination characteristic data analyzer which analyzes the illumination characteristic data into type block data and illuminance block data;

- a color temperature transformer which transforms the type block data into a color temperature value;

10 a numerical value transformer which, when the illuminance block data is a semantic value, transforms the illuminance block data into a numerical value using a mapping table; and

15 a color variation adjustor which transforms an input image itself or adjusts a color temperature and an illumination characteristic of the image display device so as to correspond to numerical values of a color temperature and illumination of the illumination characteristic data.

31. The apparatus of claim 30, wherein the color variation adjustor comprises:

20 a color temperature compensator which, when the color temperature value of illumination is higher than a currently set color temperature value of illumination or a recommended color temperature value of illumination around the image display device, transforms the input image or adjusts a color temperature display characteristic of the image display device to increase a color temperature value of an image to be displayed or when the color temperature value of illumination is lower than the currently set color temperature value of illumination or the recommended color temperature value of illumination around the image display device, transforms the input image or adjusts the color temperature display characteristic of the image display device to reduce the color temperature value of the image to be displayed;

25 and

30 a color illuminance compensator which, when a Lux value of illumination is higher than a currently set Lux value of illumination or a recommended Lux value of the illumination around the image display device, transforms the input image or adjusts the brightness characteristic and contrast characteristic of the image display

device to increase a brightness value or contrast value of the image to be displayed or when the Lux value of illumination is lower than the currently set Lux value of illumination or the recommended Lux value of illumination around the image display device, transforms the input image or adjusts the brightness characteristic and contrast characteristic of the image display device to reduce the brightness value or the contrast value of the image to be displayed.

32. The apparatus of claim 25, further comprising an image display device which outputs an image in which a color variation has been compensated for.

10 33. A method of compensating for a color variation, comprising:
generating illumination characteristic data around an image display device, the illumination characteristic data comprising a data format comprising a type block for indicating information on a type of illumination and an illuminance block for indicating information on illuminance of illumination; and
15 analyzing the illumination characteristic data to compensate for a color variation in an input image according to the type and illuminance of illumination.

34. The method of claim 33, wherein the generating of the illumination characteristic data comprises:

20 obtaining the illumination characteristic data on the type and illuminance of illumination around the image display device; and
generating the illumination characteristic data comprising the data format comprising the type block for indicating the information on the type of illumination and the illuminance block for indicating the information on the illuminance of illumination.
25

35. The method of claim 34, wherein the illumination characteristic data is obtained directly from a user via a user interface or a measurement sensor.

30 36. The method of claim 33, wherein the type block comprises:
a flag to indicate whether data in a type payload is a color temperature value or a chromaticity coordinate value; and
the type payload to indicate one of the color temperature value when the flag comprises information for indicating the color temperature and the chromaticity

coordinate value when the flag comprises information for indicating the chromaticity coordinate value,

and

the illuminance block comprises a numerical value for indicating the illuminance of illumination.

37. The method of claim 33, wherein the type block comprises:

a flag to indicate whether data in a type payload is a color temperature value, a chromaticity coordinate value, or semantic information on the type of illumination;

and

the type payload to indicate the color temperature value when the flag comprises information for indicating the color temperature value, the chromaticity coordinate value when the flag comprises information for indicating the chromaticity coordinate value, or one of an incandescent lamp, a fluorescent lamp, daylight, and skylight when the flag comprises information for indicating the semantic information,

and

the illuminance block comprises:

a flag to indicate whether data in an illuminance payload is a numerical value or a semantic value; and

the illuminance payload comprising the data for indicating a numerical Lux value when the flag comprises data for indicating the numerical value or one of dark, dim, bright, and very bright phases when the flag comprises data for indicating the semantic value.

38. The method of claim 33, wherein the compensation for the color variation comprises:

transforming type block data of the illumination characteristic data into a color temperature value and illuminance block data of the illumination characteristic data into a numerical value using a mapping table when the illuminance block data is a semantic value; and

transforming an input image itself or adjusting a color temperature and an brightness characteristic or contrast characteristic of the image display device so as to correspond to numerical values of a color temperature and illuminance of the illumination characteristic data.

39. The method of claim 33; further comprising outputting an image in which a color variation has been compensated for.

40. A recording medium on which illumination characteristic data comprising a data format comprising a type block for indicating information on a type of illumination and an illuminance block for indicating information on illuminance of illumination is recorded.

41. The recording medium of claim 40, wherein the type block comprises:
a flag to indicate whether data in a type payload is a color temperature or a chromaticity coordinate value; and

the type payload to indicate one of the color temperature value when the flag comprises information for indicating the color temperature value and the chromaticity coordinate value when the flag comprises information for indicating the chromaticity coordinate value,

and

the illuminance block comprises data for indicating a numerical Lux value.

42. A computer-readable recording medium on which the invention of claim 1 is recorded as a computer-executable program.

43. A computer-readable recording medium on which the invention of claim 33 is recorded as a computer-executable program.